

INSTRUCTIONAL MEMORANDUMS

To Local Public Agencies



To: Counties and Cities	Date: July 18, 2013
From: Office of Local Systems	I.M. No. 2.020
Subject: Federal and State Bridge Programs	

Contents: This Instructional Memorandum (I.M.) includes guidelines and procedures for the Local Public Agency (LPA) Federal and State bridge programs for highways. This I.M. also includes the following attachments:

- [Attachment A](#) - City Bridge Priority Point Rating Worksheet ([Word](#))
- [Attachment B](#) – County Bridge Priority Point Rating Worksheet ([Word](#))
- [Attachment C](#) – Touchdown Points and Limits of Participation
- [Attachment D](#) – County HBP Fiscal Constraint Requirements

GENERAL

Cities and counties in Iowa are provided dedicated funding for bridges through one Federal-aid program and two State programs. The Federal-aid bridge program is administered by the Iowa Department of Transportation (Iowa DOT) Office of Local Systems in accordance with 761 Iowa Administrative Code (IAC), [Chapter 161](#). Likewise, the State programs are administered in accordance with 761 IAC, [Chapter 160](#). In both cases, these programs are developed and administered in consultation with city and county officials through their representative organizations. This I.M. documents the results of that consultation by describing each program in detail and providing additional guidance concerning eligible bridges and eligible project costs.

FEDERAL BRIDGE PROGRAM

The 2-year Federal Transportation Bill, Moving Ahead for Progress in the 21st Century (MAP-21), signed on July 6, 2012, did not re-establish the Highway Bridge Program (HBP) which provided funding for bridge reconstruction or rehabilitation projects. However, such projects are eligible for Surface Transportation Program (STP) funding. Therefore, representatives from the city and county organizations agreed to continue a bridge program using a set-aside from the “50% Available to Any Area of the State” portion of STP funds. For the sake of continuity, we will continue to refer to these funds as HBP funds. The HBP program provides Federal-aid participation for qualifying projects at a reimbursement rate of 80 percent of the eligible costs.

The HBP allocation is divided each fiscal year with 79% for the counties and 21% for the incorporated cities. This percentage of distribution is allocated on the square footage of each jurisdiction’s deficient bridges (structurally deficient or functionally obsolete, and a sufficiency rating of 80 or less) with no limit of Average Daily Traffic (ADT). Typically, these percentages are reviewed with representative city and county organizations for possible modification at the beginning of each new Federal multi-year highway transportation bill. The portions of HBP funds allocated for cities and counties are administered differently, as outlined below.

Cities

Cities may request to add a bridge to the City Bridge Candidate List at any time, but the deadline for the next Federal Fiscal Year’s funding is October 1. Such requests shall be submitted in writing to the Iowa DOT Office of Local Systems and shall include the FHWA bridge number, route carried, feature crossed, and the most recent replacement cost estimate available. Any highway bridge within the corporate limits, whether in whole or in part, may be submitted for consideration. This includes bridges on Farm-to-Market extensions within the city limits of cities less than 500 population. The City Bridge Candidate list, including the priority points, is available on the Office of Local Systems [web site](#).

During the month of November each year, the Office of Local Systems selects bridges from the Proposed City Bridge Candidate List based on their ranking and available funding. Candidates are ranked in descending order according to their priority points (see [Attachment A](#) to this I.M.). Cities are limited to one bridge per city per fiscal year. The total Federal-aid contribution limit per bridge is set at \$1 million.

Priority points will be calculated using the data shown on the SI&A form. If the data on the SI&A form does not reflect the most recent inspection, the priority points will not correctly reflect the status of a bridge when the Iowa DOT's Proposed City Bridge Candidate List computer program is ran.

Each city with a selected bridge is sent a letter offering HBP or State bridge funding for the next Federal Fiscal Year. State funds are typically offered to only one or two small bridges per year. The city then decides if they have the matching funds to proceed and sends a letter accepting or rejecting the funding. If accepted, the city provides an updated cost estimate and information on who will administer the project. The Office of Local Systems will then prepare the appropriate agreement for the project for distribution by the District Local Systems Engineer (DLSE). This agreement will indicate if the project will receive Federal-aid or State funding, as determined by the Office of Local Systems. The city must sign and return the agreement to the DLSE within 90 days of receipt. If a city does not return an agreement within 90 days, the Office of Local Systems will treat the offer as declined by the city.

After the agreement is approved, the city may begin project development; however, the city must receive written notification from the DLSE prior to beginning any work for which they desire Federal-aid reimbursement. Project development activities shall be carried out as outlined in the [Federal-aid Project Development Guide](#) and the associated I.M.s.

Projects must meet all the Federal-aid requirements and be let at the Iowa DOT within 3 years of signing the agreement. If requested by the city, a 6 month extension may be granted by the Office of Local Systems.

HBP funds awarded are for the next Federal Fiscal Year, which begins on October 1. These funds are not available until the corresponding Federal appropriations bill is passed, which is supposed to occur prior to October, but often is delayed. If a city would like to begin Federal-aid reimbursable work before the awarded funds are available, the following process must be followed:

1. The project agreement must be signed by both parties.
2. The city (not a consultant) must send a request to the DLSE for approval to perform reimbursable work early. This request must specifically identify the cost of work to begin before the awarded funds are available.
3. The DLSE forwards the request to the Office of Local Systems for approval. The Office of Local Systems will confer with the Office of Program Management to determine if sufficient funds are available. The Office of Local Systems will notify the DLSE of its decision and the DLSE will notify the city.
4. If approved, the city must then include the project in the current year of the TIP/STIP.
5. The city may begin the FHWA authorization process for only the work that they have requested. Work must not begin until written notice of FHWA authorization has been received from the DLSE.

Counties

The Office of Local Systems does not select county bridges for HBP funding. Instead, county bridge projects are selected by the County Engineer in cooperation with the County Board of Supervisors. HBP funds are allocated to each county according to the following formula:

1. One-third (33 percent) on the county Road Use Tax (RUT) fund distribution, weighted 32 percent on the Farm-to-Market Factor and 68 percent on the Secondary Road Factor, as calculated by the Iowa County Engineers Service Bureau.
2. Two-thirds (67 percent) on a qualifying deficient bridge factor. This factor is the percent of square footage of SD or FO bridges with ADT's greater than or equal to 25 and a Sufficiency Rating of 80 or less.

After receiving the notification of the HBP funds available, the Office of Local Systems will notify the counties of their allocations based on the latest factors. Counties then select their own bridges for programming and development. Any eligible bridge may be programmed, provided the counties' HBP program as a whole is fiscally constrained in the Statewide Transportation Improvement Program (STIP). For additional information regarding the fiscal constraint requirements and procedures, see [Attachment D](#) to this I.M.

No county will be allowed to accumulate more than 3 years of HBP funds. In October of each year, the years of funds accumulated is calculated by taking an average of the last 3 years' allocations and dividing that into

the current balance of unobligated HBP funds. Projects let in the Iowa DOT's December letting or before, will be considered as obligated for purposes of this calculation. Counties with more than 3 years of accumulated funds after the December letting will have the amount that exceeds 3 years accumulated funds redistributed to those counties with less than 3 years accumulated funds.

Counties with approved bridge projects that could exceed their accumulated allocation may be able to let their projects, provided that HBP funds are available and the total cost does not exceed their anticipated 6 year allocation in the current year. The Iowa DOT may grant exceptions. Since Counties may "borrow ahead" in this manner, saving up for a large project may not be used to obtain a waiver from the 3 year accumulated funds limit.

The allocation system described above is designed to maximize utilization of all of the available HBP funds but does not guarantee that a county will be able to let a HBP funded bridge project each and every year, or be able to utilize its entire allocation. This system is dependent upon all of the Federal-aid funds being released at the beginning of the Federal Fiscal Year.

Project development activities shall be carried out as outlined in the [Federal-aid Project Development Guide](#) and the associated I.M.s. All projects must be let by the Iowa DOT. After letting, the county makes initial project payments either from their Farm-to-Market or Secondary Road funds, depending on which system the bridge is on. The Federal-aid (80 percent of the participating project cost) will be reimbursed to the appropriate fund, up to the amount shown in the STIP.

STATE BRIDGE PROGRAMS

City Bridge Construction Fund

Iowa Code Section 312.2, 12.b provides \$500,000 annually off-the-top from the Road Use Tax Fund to the city bridge construction fund for the reconstruction or replacement of highway bridges within or touching a city's corporate limits, regardless of who owns the bridge. This includes bridges on Farm-to-Market extensions within the city limits of cities less than 500 population. State participation in qualifying projects will be 80 percent of the eligible costs, up to the limit specified in the project funding agreement.

The City Bridge funds are allocated to cities in the same manner as the HBP funds for cities, as described above.

Project development must comply with State law and the agreement provisions. Projects involving only City Bridge Funds or other non-Federal-aid funds may be let locally by the city.

County Bridge Construction Fund

Iowa Code Section 312.2, 12.a provides \$2 million annually off-the-top from the Road Use Tax Fund to the county bridge construction fund for the construction, reconstruction, or replacement of highway bridges on the Secondary Road System. State participation in qualifying projects will be 80 percent of the eligible costs, up to a maximum of \$2 million per project.

During the month of November each year, the Iowa DOT Office of Local Systems requests one candidate from each county for County Bridge funds. To assist counties in selecting candidates for funding, the Office of Local Systems prepares a current listing of each county's qualifying bridges along with a determination of priority points, calculated in accordance with County Bridge Priority Point Rating factors (see [Attachment B](#) to this I.M.). A list of all county bridges including their priority points is available on the Office of Local Systems [web site](#).

Candidates are ranked in descending order according to their priority points. Projects are selected from the listing until the available funds are obligated. The successful county candidates are notified of funding in January.

Project development must comply with State law and the agreement provisions. Projects involving only County Bridge Funds or other non-Federal-aid funds may be let locally by the county.

ELIGIBLE BRIDGES

In general, to be eligible for either HBP or State bridge funding, a bridge must be classified as structurally deficient (SD) or functionally obsolete (FO); have a Sufficiency Rating of 80 or less; and have an Average Daily Traffic (ADT), as determined by the Iowa DOT, greater than or equal to 25. Each of these criteria are explained in more detail below.

SD or FO

For a bridge to be classified as SD or FO, one of the following conditions must be met on the Structural Inventory and Appraisal (SI&A) form:

SD:

1. A condition rating of 4 or less for:

Item 58 - Deck; or
Item 59 - Superstructures; or
Item 60 - Substructures; or
Item 62 - Culvert and Retaining Walls.¹

2. An appraisal rating of 2 or less for:

Item 67 - Structural Condition; or
Item 71 - Waterway Adequacy.²

FO:

1. An appraisal rating of 3 or less for:

Item 68 - Deck Geometry; or
Item 69 - Underclearances³; or
Item 72 - Approach Roadway Alignment.

2. An appraisal rating of 3 or less for:

Item 67 - Structural Condition; or
Item 71 - Waterway Adequacy.²

¹ Item 62 applies only if the last two digits of Item 43 are coded 07 or 19.

² Item 71 applies only if the last digit of Item 42 is coded 0, 5, 6, 7, 8, or 9.

³ Item 69 applies only if the last digit of Item 42 is coded 0, 1, 2, 4, 6, 7, or 8.

Any bridge classified as SD is excluded from the FO category. In other words, a bridge cannot be classified as both SD and FO, even if it meets the requirements for both classifications. All bridges are classified as SD, FO, or "neither".

Sufficiency Rating

The Sufficiency Rating is calculated using SI&A data, according to the formula given in the [Recording and Coding Guide for the Structure Inventory and Appraisal of Nations Bridges](#), published by FHWA.

HBP Funds – Bridges with a Sufficiency Rating of 60 or less are eligible for replacement or rehabilitation. Bridges with a Sufficiency Rating of 61 to 80 are eligible for rehabilitation only, unless approved by the Iowa DOT Office of Local Systems (see "REHABILITATION WORK" section below for more information).

State Bridge Funds – Bridges with a Sufficiency Rating of 80 or less are eligible for either replacement or rehabilitation.

ADT

The current Average Daily Traffic (ADT) must be greater than or equal to 25 vehicles per day (vpd), as determined by the Iowa DOT. If the LPA disagrees with the Iowa DOT's ADT, Item 29 on the SI&A, the LPA

may request an update, provided new count data is submitted and the data collection methods are verified by the Iowa DOT, Office of Transportation Data. The Iowa DOT loans traffic counting equipment to local agencies on an as-available basis. For equipment availability and other questions, please contact the Office of Transportation Data at 515-239-1323.

If there is evidence that the deteriorating condition of the bridge caused the low ADT, the LPA may submit a request for consideration to waive this requirement. The most effective documentation are old traffic counts that show higher volumes when the bridge was in better condition. However, if old traffic counts are not available, other factors may be considered, such as progressively more restrictive load postings over an extended period of time.

FHWA Qualifying Bridge List

The FHWA Qualifying Bridge List (QBL) is prepared in the fall of each calendar year. Bridges on the QBL meet the HBP requirements for SD / FO and Sufficiency Rating; however, they may not meet the ADT requirement. QBL data for a bridge may be viewed by clicking on the QBL link shown for the project in the Transportation Program Management System (TPMS) development module. If no link is shown, the bridge is not on the QBL.

The QBL is based on information that may be over one year old; therefore, it is possible that an eligible bridge may not be included on the list. If an LPA wishes to use HBP funds for a bridge not on the QBL, a written request must be submitted to the DLSE. Updated SI&A information and any other documentation needed to justify the request must be attached or uploaded to the Iowa DOT's [Structural Inventory and Inspection Management System](#) (SIIMS). After the eligibility has been verified by the DLSE, the DLSE will forward the request to the Office of Local Systems. This request must be reviewed and approved by the Office of Local Systems before any HBP funds can be authorized for work on the bridge.

Caution: If the SI&A ratings for the bridge requested have dropped significantly (i.e., 2 points or more in the last year), Local Systems will probably require additional information or explanation to justify the sudden change in bridge conditions. Such additional information might include pictures or other documentation provided by the city, county, or consultant that explains why the sudden change occurred. Reasonable care should be taken to verify that the changes to the SI&A ratings are justifiable, especially for those bridges that are close to not qualifying. Questionable SI&A rating information may lead to an audit of the city or county bridge inspection program.

If a bridge has been closed for 10 years, it is considered not significantly important and is therefore not eligible and will be removed from the list; unless, the LPA has made reasonable progress in scheduling the rehabilitation or replacement of the bridge, which indicates the bridge was of significant importance.

BRIDGE INSPECTIONS

All public highway bridges must be inspected in accordance with the National Bridge Inspection Standards (NBIS), as required by 23 CFR 650, [Subpart C](#). If the Iowa DOT determines that an LPA is not in at least conditional compliance with NBIS requirements that LPA is not eligible to receive any type of Federal funds or State bridge funds, even if it has bridges that meet the eligibility requirements outlined above. For additional guidance concerning the NBIS requirements, refer to [I.M. 2.120](#), Bridge Inspections.

Bridges carrying highway traffic over a railroad may be owned by a railroad company. If the railroad company owns the bridge, it is not subject to the inspection requirements of the NBIS. As a result, this bridge is not listed in the National Bridge Inventory (NBI) and is not eligible for Federal funding, unless the following steps are taken:

1. The bridge is inspected according to NBIS requirements.
2. Any rehabilitation or replacement of the bridge includes the requirement that ownership of the bridge is transferred to a public agency that will be responsible for maintaining the structure.

ELIGIBLE PROJECT COSTS

Types of Costs

Within the Limits of Participation (see below), HBP funds and City Bridge Funds may be used for preliminary engineering, right-of-way, construction, utility relocations (as per [I.M. 3.650](#)), and construction engineering. County Bridge Funds may only be used for construction costs within the Limits of Participation.

Limits of Participation

Replacement cost may include the bridge plus a nominal amount of roadway work sufficient to connect the structure to the existing roadway or return the grade line to an attainable Touchdown Point in accordance with [I.M. 3.205](#), Urban Design Guidelines, and [I.M. 3.210](#), Rural Design Guidelines. In most situations the Touchdown Points and the Limits of Participation are at the same location. However, there are a few situations where the Limits of Participation may extend beyond the Touchdown Points. For more information, see [Attachment C](#).

Limits on Channel Work

Reasonable channel work necessary to improve the stream alignment through the bridge opening is eligible for funding. Typically a limit of 500 feet is allowed under USACE Nationwide Permit Number 13, therefore, channel realignments exceeding 500 feet are typically not eligible for HBP or State bridge funds. To be eligible the work must be accomplished as part of the bridge project.

REHABILITATION WORK

Bridge rehabilitation projects have some additional requirements and procedures associated with them, as described below.

Future Bridge Program Eligibility

Because HBP funds are allocated to cities and counties in part based on the number of SD and FO bridges, the Iowa DOT has instituted a “10-year rule” that prevents a bridge from remaining in either the SD or FO classifications after being replaced or rehabilitated, regardless of the type of funds used for the replacement or rehabilitation project. Rehabilitation projects are defined as requiring major work to restore the structural capacity of the bridge, as well as work necessary to correct major safety deficiencies. The Iowa DOT also considers bridge deck overlays that meet the requirements outlined below as rehabilitation work.

The effect of this rule is that the Iowa DOT will remove any bridge that has been replaced or rehabilitated in the last 10 years from the Qualifying Bridge List, and as a consequence, such bridges will not be eligible for Federal or State bridge funds in Iowa. Therefore, LPA should carefully consider the potential funding impacts when planning any type of bridge replacement or rehabilitation project.

Structural and Safety Deficiencies

The purpose of the Federal and State bridge programs is to address bridges that are SD or FO; therefore, a rehabilitation project must correct a bridge’s SD or FO status (except as noted in the “Design Exceptions” subsection below) and any major safety or structural problems. For example, the project may have to include widening, barrier rail, strengthening, etc. The remaining life of the rehabilitated bridge must be at least 15 years. The structural capacity after the rehabilitation must be greater than H15.

To address possible safety problems, bridge rehabilitation projects should be reviewed according to the safety considerations outlined in [I.M. 3.214](#), 3R Guidelines. Bridge rails and approach guardrails should be reviewed in accordance with [I.M. 3.213](#), Traffic Barriers (Guardrail and Bridge Rail).

Replacement vs. Rehabilitation

If the bridge is only eligible for rehabilitation with HBP funds but the LPA requests replacement instead, the LPA must submit a written request to the Office of Local Systems with the following information:

- The reason for replacement vs. rehabilitation. This should include specific numbers relating to such considerations as ADT, detour distance, load limits, number, and proximity of crossings on the stream, bridge widths in the area, public input, safety aspects, etc.
- A cost estimate of rehabilitation to current standards for width and load carrying capacity, and a cost estimate for replacement.
- For county bridges, an explanation of why each of the bridges in the county with a Sufficiency Rating of 60 or less is not being replaced before the proposed structure. Each bridge should be addressed individually or grouped by similar Sufficiency Ratings, ADT, road system, road surface type, or any other logical way.

The Office of Local Systems will review the proposed justification for possible approval. If the rehabilitation cost is more than 65% of the replacement cost, it is probably more cost effective to replace the bridge and the Office of Local Systems and FHWA will usually approve replacement. The Office of Local Systems and FHWA will also examine the merits of the project and what the LPA is doing to replace or rehabilitate its remaining deficient bridges.

For city projects, if the replacement is not approved by the Office of Local Systems or FHWA, the city may use the funding offered for rehabilitation, or they may decline the funding offered and remain on the Proposed City Bridge Candidate List until the bridge qualifies for replacement.

Overlays

Bridge deck overlays are not typically eligible for HBP or other Federal funds unless the project includes substantial reconstruction of the deck by removing all deteriorated deck concrete. Deteriorated concrete includes areas that are delaminated or spalled; as well as, concrete which is contaminated with chloride above the corrosion threshold. The LPA may either remove the entire deck down to the top mat of reinforcement or they may perform chloride testing to determine what, if any, areas of the top mat need to be removed and replaced. When the chloride concentration exceeds 0.6 of the hydroxyl concentration, corrosion is observed¹. Chloride contents in excess of 0.025% per cubic yard of concrete for uncoated mild steel reinforcing bars and 0.1% per cubic yard for epoxy coated bars will cause corrosion to begin. This contaminated concrete must be removed and replaced. For concrete with a density of 150 lb./ft.³ this is 1 pound of chloride per cubic yard of concrete for uncoated steel and 4 pounds of chloride per cubic yard of concrete for epoxy covered bars. If testing is performed instead of removing and replacing the top mat of the deck, the plan sheets should document the following information: locations where testing was performed, the outcomes of the testing, and what action needs to be taken because of the testing. No specific approval from FHWA is required to perform testing in lieu of replacing the top mat.

Design Exceptions

Bridge rehabilitation projects should be designed to meet the AASHTO structural design guidelines referenced in [I.M. 3.510](#), Check and Final Bridge or Culvert Plans, and the applicable geometric design guidelines provided in [I.M. 3.210](#), Rural Design Guidelines, [I.M. 3.205](#), Urban Design Guidelines, and [I.M. 3.214](#), 3R Guidelines. Design exceptions for structural capacity less than what the bridge was originally designed for will not be granted. However, if the LPA can demonstrate that is not cost effective to upgrade the bridge to meet the geometric design guidelines, a design exception may be approved as prescribed in [I.M. 3.218](#), Design Exception Process.

If a design exception is granted for a geometric element on a bridge rehabilitation project, the LPA has determined that for the remaining life of the bridge, it is adequate for the type and volume of projected traffic, and that particular geometric element may not be used as the basis for classifying the bridge as FO. Examples of such geometric elements include deck width, vertical clearance over the bridge roadway, vertical and horizontal underclearances, and approach roadway geometry. Since this may affect the future eligibility of the bridge for the Federal and State bridge programs, LPAs should carefully consider this before requesting a geometric design exception.

¹Hausmann, D.A. (1967) "Steel Corrosion in Concrete: How Does it Occur?" *materials Protection*, **6**, 19-23.